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5. — 1. *First Report of the Geology of the State of Maine.* By Charles T. Jackson, M. D., Member of the Geological Society of France, &c. &c. Augusta; Smith & Robinson, Printers to the State. 8vo. pp. 128.
2. *First Report on the Geology of the Public Lands in the State of Maine.* By Charles T. Jackson, M. D. Boston; 1837. Published by order of the Legislature of Massachusetts. 8vo. pp. 47.

It certainly augurs well for the future prosperity of this country, that the wisdom of several of our State legislatures is leading them to avail themselves of the labors of their eminent scientific men, in searching out and bringing to light our immense mineral treasures. "Undiscovered knowledge," says Dr. Wayland in his treatise on Political Economy, "is just as rich in the means of human happiness, as discovered knowledge." And "who," adds he, "can tell the benefit which will result to this country, when Geology has revealed to us the riches which at present remain hidden from our view, beneath the surface of the soil?" This, it is gratifying to see, is in process of speedy accomplishment. Massachusetts led the way, and has been followed by Tennessee, Maryland, Virginia, Ohio, Pennsylvania, New Jersey, New York, Connecticut, and the State, in the survey of which Dr. Jackson has lately been employed. His two reports will, we feel assured, be esteemed among the ablest that have appeared on the geology of America, and worthy of the well known talents and attainments of their distinguished author.

A resolve for making "a Geological Survey of the State, upon a basis commensurate with the magnitude and variety of its territory," passed the Legislature of Maine, March 28, 1836, in concurrence with a similar resolve of the Legislature of Massachusetts, passed March 21, 1836, in regard to her public lands in that State. Dr. Charles T. Jackson, of Boston, was immediately selected by the executives of both States to conduct the survey; upon the duties of which he entered early in the season, and prosecuted it during the summer and autumn. He was assisted, on the part of Maine, by Dr. T. Purrington of Brunswick, by Mr. James T. Hodge, of Plymouth, for Massachusetts, and by Mr. F. Graeter as draftsman.

The field of discovery was a new one; the labor of making a thorough Geological survey of a territory so extensive, and so much of it covered with dense and trackless forests, was extreme; and we have been pained to learn, that an additional discouragement has been presented in an unexpected and material reduction of the salary of the surveyor, already a quite inadequate compensation for such valuable services. Under such circumstances, it is doubly honorable to the gentleman, who had commenced the work in a manner so worthy of himself, and of the cause of science, that he determined to prosecute still, and if possible, to a successful accomplishment, his praiseworthy undertaking.

Only a small portion, of course, of so extensive a territory could be minutely examined in the short space of one season; yet, by a well-directed application of effort, a key has been obtained to the geological features of the whole State, which will greatly aid future observations; while much knowledge, of definite, and immediately available utility, in the discovery of valuable localities of minerals and ores, has been given to the world. The general plan pursued was, to examine the sea-coast of Maine, with its bold and rocky shores, numerous indentations, and lofty mural precipices, making frequent incursions into the land; and then to follow the direction of the boundary line along the St. Croix and St. John, to Madawaska River, thus making a *reconnoissance* of two sides of a square, forming the southern and eastern boundaries of the State. Besides this, a great number of minute surveys were made of important localities. The mention of a few of these may give some idea of the mineral treasures of Maine.

> "The largest and most important bed of *iron ore*," says the Report, "is found on the boundary line between New Brunswick and Maine, at Woodstock. This bed probably traverses our territory, cutting through the township of Hodgdon, and running through an unknown extent of country. This bed is said to be nearly 900 feet wide, and its length is unknown! The ore is the compact red *hæmatite*, and will yield 44 per cent. of pure metallic iron, and 50 per cent. of cast iron. Allowing its specific gravity to be 3.5, and some of it will range still higher, a cubic foot of the ore will weigh 200 pounds. If the ore were wrought to the depth of 100 feet, and 500 feet in length, we should have for the cubic contents, $900 \times 100 \times 500 = 45{,}000{,}000$ cubic feet of ore. This ore yielding 50 per cent. of cast iron, we should have 4,500,000,000 pounds of iron that can be wrought from this bed, within these narrow limits." — *Maine Report*, p. 101.

The existence of this inexhaustible bed of ore was not even dreamed of, till the visit of Dr. Jackson. He was led to it, by seeing some specimens of red slate, covered with black oxide of manganese, which he instantly recognised as the matrix of the hæmatite iron ore. Its situation, on the banks of the St. John's, will render it easily available to commerce, while the smelting of the ore will create a great demand for charcoal, which will be furnished by the abundant forests on the public lands. Its vicinity, too, to one of our military posts at Houlton, renders it a discovery of national importance, and one which should not be overlooked by government.

Several valuable localities of roofing slate were discovered, the most important of which is that at Brownsville, situated forty miles N. N. W. from Bangor, and within two hundred rods of Pleasant River, a navigable branch of the Penobscot. "This locality," says the Report, "is inexhaustible, and the slate is of an excellent quality, containing no pyrites, and is capable of resisting, as may be seen on its exposed surface, the action of air and water for ages, without undergoing decomposition." By driving a chisel between the layers of the stone, "sheets of a perfectly even surface may be split off with great ease, which are of suitable thickness for roofing, and from two to five feet square." The quarry is on a hill, and the slate may be conveyed by a gentle declivity, on a rail-road, to the river. From data furnished by gentlemen well acquainted with the navigation of the Penobscot, it appears, that it could be landed in Boston, at the cost of eight dollars per ton, while Welsh imperial slates sell at twenty-seven dollars per ton ; and this locality, in the opinion of Dr. Jackson, will furnish "an equally good article." "I feel no hesitation in saying," adds he, in his remarks on this subject, "that, in my opinion, Maine is capable of supplying all the United States with good roofing slates."

A species of green marble was discovered at Starboard's Creek and also at Machias, which promises to be of considerable commercial value, in the manufacture of *hydraulic cement*, into which it can be converted by a very simple process.

Black oxide of manganese, a valuable article in commerce, was discovered in several different places ; in small quantities, indeed, yet sufficient to warrant the belief of its being found in great abundance. Some indications of tin were detected in specimens of wolfrenn, or ferruginous oxide of tungsten, found at Blue Hill. There are plausible reasons for believing, we learn from the Report, that the bituminous coal formation of New Brunswick, and which Dr. Jackson, in a private survey, formerly traced to Grand Lake, where a mine is now wrought by a company from Boston, extends through a part of the State of Maine. New red sandstone, identical with the sandstone of Nova Scotia, which contains gypsum, salt springs, and coal, has been found in several places, containing in some instances the charred remains of fossil plants, and impressions of fern leaves. A salt spring, which issues from the soil near the junction of this sandstone with argillaceous limestone rock, was discovered near Lubec, a chemical analysis of the waters of which has been made by Dr. Jackson. At Lubec are several veins of galena, an ore of lead, composed of lead and sulphur, contained in an argillaceous limestone, which are already wrought to some extent.

Limestone and marble are also among the great resources of the State. One of the most abundant localities of limestone is at Thomaston, where the quantity of lime manufactured the last year is estimated at four hundred thousand casks. This is sold at the average price of one dollar per cask.

Dr. Jackson has also devoted considerable attention to the comparative analysis of soils, and made a collection illustrating their geological origin, by which they may be traced back to the rocks from which they originated. The subject is certainly one of much practical interest; and this is, we believe, the only collection that has been made in this country to illustrate it. Numerous drawings and plates, by Mr. Graeter, illustrating the subjects of the Reports, accompany them.

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6. — *Twelve Lectures on the Connexion between Science and Revealed Religion. Delivered in Rome.* By Nicholas Wiseman, D. D., Principal of the English College, and Professor in the University of Rome. Andover; Gould & Newman. 1837. 8vo. pp. 404.

Dr. Wiseman, we are told, in the advertisement to this edition of his Lectures, is the head of the English College at Rome, an institution devoted to the instruction of young men in theology, under the supervision of a cardinal, and receiving the attention of the head of the Romish Church. We are also told, that Dr. Wiseman was born of English parents, in Spain; and though we are not informed concerning the places in which he received his education, or the methods in which he pursued his early studies, it is evident that he is a man of varied learning; and he has shown himself, on another occasion, well acquainted with the writings of some of the most distinguished German authors.

About two fifths of the present work are taken up with the early history of the human race. Beginning without any thesis or theory on the subject, the author plunges deeply into comparative philology; or, to call it by its recent and more learned name, *Ethnography*, that is, the classing of nations by means of the comparative study of languages. He adverts to the limited